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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society Of America

VOL. IV AUGUST, 1932 NO. 2

Dr. Rudolph Marloth
(See page 226)

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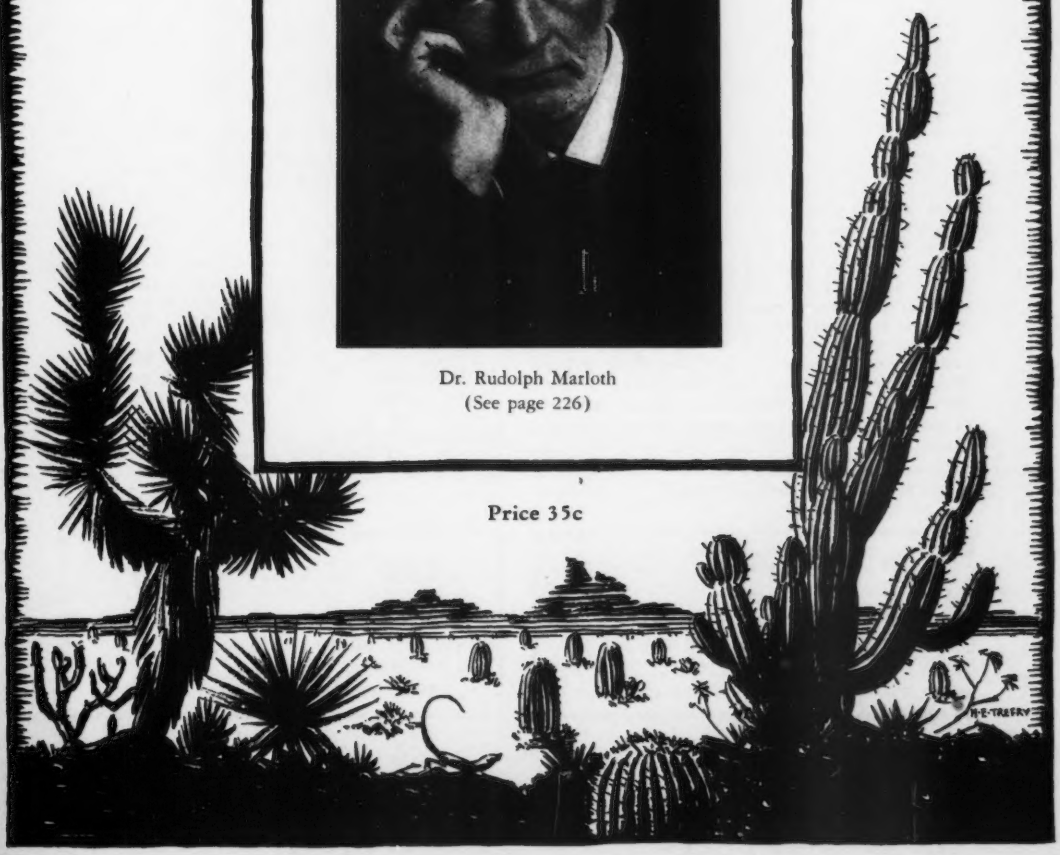

CACTUS AND SUCCULENT JOURNAL

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THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. "The Cactaceae," by N. L. Britton and J. N. Rose, has been adopted by this journal for purposes of identification. (Membership and subscription $3.00 per year, foreign $3.00 per year.) Mail membership application and subscription to the Secretary, Margaret Kincher, 1421 Dominion Avenue, Pasadena, California.

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Dr. Rudolph Marloth

In the "Cactus Patch" page 58, Volume III of the CACTUS JOURNAL was mentioned the death of Dr. Rudolph Marloth of Stellenbosch, South Africa. This brief announcement hardly did justice to one as eminent in the botanic world as is Dr. Marloth. His name is well known to nearly every reader of the CACTUS JOURNAL, and he is recognized as one of the outstanding botanists on African Succulents.

Dr. Marloth's first botanical work was "Das Kapland," a description of the Cape Flora, in the publications of the German Deep Sea Expedition, this is a work describing in words and pictures the wonders of the South African flora, and is considered an excellent description, especially where the relations of plants are taken into consideration.

At the time of his death he was engaged on the most significant work of his life "The Flora of South Africa" three volumes of which have been completed, and the fourth was almost ready for the publisher. In these books many color plates of Succulents are shown, and a glance through them is a delight to everyone interested in South African Succulents.

Dr. Marloth was born in Luebben, in the Spree Forest, December 28, 1855, and attended college in Berlin, Germany, where he took great interest in botany. After graduation he engaged in pharmacy. In 1883 he migrated to South Africa where he became one of the greatest authorities on the native plants of that country, and later became professor of botany and chemistry in the University of Stellenbosch, formerly known as the Victoria College.

It was while on a well earned vacation at Caledon that he suffered a heart attack on the evening of Ascension Day and died on the morning of May 15, 1931 without regaining consciousness. On the 18th of May he was buried in the Mowbray Cemetery in Cape Town, attended by many dignitaries and scholars of Africa. The services which were in German, English and Dutch (or Afrikaans), were held in the German Church.

Friends of the Succulents have Dr. Marloth to thank for many of the rarer and most recent discoveries introduced in the United States. In his later years he was occupied with the Euphorbia species native to Cape Province, and shortly before his death he introduced some very interesting species of this genus to the plant loving public.

—G. A. FRICK.

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Ceropegia fusca Bolle.
From Deutsche Gartner-Zeitung, Sept. 1931

Ceropegia fusca Bolle.

By LEON CROIZAT

I don't feel particularly keen on the amenities of the bar but my subject requires that I draw up a piece of preliminary writing which smacks very strongly of a legal brief. Pray, reader, be patient. I deal with two members of the family *Asclepiadaceae*: *Ceropegia fusca* (Bolle) and *C. dichotoma* (Haw.)

To the group of the Canary Islands, off the Western Coast of Northern Africa belong amongst others: Tenerife, Gran Canaria and Hierro, the smallest of the three, also called Ferro, famous for its world dividing meridian. To these three islands are restricted our *Ceropegiae,* in particular: *Ceropegia fusca* is found on Gran Canaria and Tenerife. *C. dichotoma* has elected to live on Hierro.

Habitat is, therefore, the first point on which our CEROPEGIAE differ between themselves.

Second element of difference—the color of the blossom, which is: light yellow or lemon yellow for *Ceropegia dichotoma,* reddish brown or yellow brown for *C. fusca.*

Eventually Bolle, the discoverer of *Ceropegia fusca* back in 1860, has this much to say: "*C. fusca* affinis est *Ceropegiae dichotomae,* a qua caulis crassioribus, albidis, et floribus rubro-

brun neis differt". This uncouth sample of Latin reads, translated: "*Ceropegia fusca* is like *Ceropegia dichotoma,* from which it is distinguished by stouter stems, whitish in color, and by the brown-red hue of the blossom."

Winding up my brief I now feel free to conclude that I have two sister plants, *Ceropegia dichotoma* and *C. fusca,* which can very properly form the object of a single article, because they differ at sight in only one element, which is very hard to ascertain if the origin of the plant is unknown and the blossom is absent.

The stems of *C. dichotoma* are gray or, light yellow-green, or brown according to age and season of the year, and recall those of *Kleinia anteeuphorbium.* The roots are exactly like *Stapelia gigantea's,* to say numerous and "matting." The leaves are deciduous, opposite, brown or dark green, and daintily nerved. End of February, beginning of March is blossom time for my potted plants.

Should my reader feel inclined to consult my own sources of information other than personal, and read at leisure the mass of facts gathered in the past concerning both these CEROPEGIAE he will please turn to:

—C. Bolle—Bonplandia, Volume IX, 1861.

—Curtis's Botanical Magazine—Table 8066, Volume II of the IV Series.

—Journal of the Royal Horticultural Society of Great Britain—Volume 1907, page 454—A remarkable accompanying photograph shows how *C. fusca* is to be confused at sight with *Euphorbia schimperii.*

—Alwin Berger—*Stapelien* und *Kleinien*—under CEROPEGIAE (Verlag E. Ulmer, Stuttgart.)

—Dr. Oscar Burchard—Beitrage zur Oekologie und Biologie der Kanarenpflanzen (Schweitzerbart'sche Verlagsbuchhandlung — Stuttgart.)

—Dr. Oscar Burchard—*C. fusca,* being an article in Moellers Deutsche Gaertner Zeitung of Erfurt, September 21st, 1931.

Making a little further addition of my own I recall here that A. Berger gives as local name for *C. fusca*: Barranco Seco; for *C. dichotoma,* Mata perro. My Southern California readers will easily tell that the former name means "Dry Creek", the latter "Dog Killer". It appears, however, that while CEROPEGIAE are guiltless in connection with canine slaughter, they are damned to death just the same by eagerly seeking, hungry goats, which are wiping out the two species.

Dr. O. Burchard, a botanist of great merit as well as an author of rare descriptive charm, who has the privilege to live on the spot in Orotava, Canary Islands, makes in part the following remarks about *C. fusca* in its wild state:

"*C. fusca* looks more like a bunch of bleached bones than like a plant. Old specimens shed a number of joints, which lie at the foot of the parent plant, and keep full and fresh despite heat and lack of moisture. This casting off of joints assists the plant in keeping down its surface, and helps it in conjunction with the reflecting white color of the stems, to resist under a pitylessly scorching sun. The wound caused by the fall of joints heals very quickly and soon turns white like the parent stem.

"*C. fusca* is rarely found, and is strictly a local plant. It thrives in stony, clayish ground and doesn't grow very tall. The roots wrap themselves around stones and sods, and send up over the ground new stems year after year. The plant is thus easily multiplied. Old and very old specimens may, however, cover up to two feet or a little over one yard of ground.

"Seedlings are quite like grown plants, but they are black. During the first Summer of life black is turned into gray, which again fades into white the second year. Fresh growth on old plants, is also dark. The blossom, of pleasing shape and true to the lanternlike form of the family ASCLEPIADACEAE, is brownish yellow or lemon yellow and appears in masses both at the top of the plant and at the joints. Few flowers are pollinated so that the seedpods are rare and far between on wild plants. These seed pods are shaped like horns, and take a long time to ripen."

So states Dr. Burchard on the native status of *C. fusca.* Barring statements to be made to the contrary it seems that *C. dichotoma* behaves on its native range like *C. fusca.* It is remarkable that some of the *C. fuscae* seen and described by Dr. Burchard should carry lemon yellow blossom, which color ought to indicate *C. dichotoma.* Obviously the two sister plants differ very slightly, if at all, and must share the same habits, if actually not the same habitat.

Turning now to cultural directions I am happy to be able to quote again Dr. Burchard, who is also a practical horticulturist of great ability. He says in part:

"*C. fusca* can be kept in pots without difficulty, and grows very easily from seed. It is necessary, however, to stop watering immediately after the plant has begun to grow new stock, and should the plant be located outdoors it must be protected against rain. Seedlings and cuttings require heavy soil with rough sand, pebbles and clayish loam well mixed. Give a perfect drainage and set the pot in full sunlight in a dry location. When a specimen is first potted it must be watered abundantly and immediately, and must be kept moist afterwards only at long intervals. No water should be given during the Summer, even when the fresh growth of the plants appear to be shrivelling. Water must be given again at the end of the Summer which marks the awakening of the *Ceropegia,* but little by little, keeping in mind the fact that *Ceropegia* receives in its native range only once in a great many years a real shower of drenching rain. The plants must be kept dry and in a cool locality during the Winter months."

Speaking now for myself I fully agree that CEROPEGIAE do not require much water. Plants given an excess of moisture at first become straggling, then "fizzle out", eventually crumbling and rotting away altogether. CEROPEGIAE are richly succulent, which circumstance breaking a joint readily shows, and it is hard to blame the goats which in a thirsty land seek out and eat with great gusto such juicy stems. A good watering once in a great while, and some light spraying in season, is all that CEROPEGIAE require in point of moisture. To help the soil retain moisture I use a deep pot, and place not far from the roots of the plant some firm, albeit porous clinkers of hard coal, and "stuff" it inside with soil too. Such clinkers retain the roots and fix moisture; this little trick helps in properly potting plants which dislike water, *Stapelia* for instance. No particular care is required in the preparation of a suitable compost for potting. Make standard soil such as used for our native cacti: loam (better heavy and truly clayish), sand, very little manure or rich leaf mold, a trace of slack lime, and some pulverized wood charcoal. Add pebbles and broken rock beside clinkers and pot firmly and deeply. Keep, of course, dry in a sunny location. If the plant is to be on the safe side the temperature must never go below 40 Farh.

Reproduction can be effected by cuttings, which are rooted in tightly packed sand, and kept rather dry. Seeds germinate quickly. I wish, however, to warn my reader that it is necessary the seed should be buried flat (seeds of *C. dichotoma* and *fusca* are shaped like a diminutive *Cucurbitacea's*) at a depth of no less than one to one and a half times the greater length of the seed itself. The seedling is fitted with a good size taproot which is apt to remain exposed over the ground if the seed has not been planted deep enough, and waste away after a promising start.

Take also good care that the soil for the sowing bed is loose, thus affording a good chance for the seedling to sink its root readily. Mix in it quartzitic sand (sand with sheer quartz grain of irregular shape. Sand with round grain has a tendency to pack, making the soil hard under watering, and may be used to a better purpose rooting cuts only. I am inclined to believe that failure of many different seeds to germinate is due to the packing of the soil).

Seedlings and Photo by James West

Ceropegia fusca Bolle. seedlings x .1

Ceropegia fusca and *C. dichtoma* ought to find a congenial home in many localities of our Southwest. They have been grown for a number of years in the Garden of La Mortola, near Ventimiglia, on the Italian Riviera, which has a climate easily duplicated in many areas of our country.

Contributions Toward a Monograph of the Genus *Dudleya*

By DONALD A. JOHANSEN

FOREWORD

It has long been keenly felt that the typically Californian succulent genus *Dudleya* was acutely in need of revision. Recent attempts on the part of certain poorly equipped specialists, who for the most part never saw a *Dudleya* in its native haunts, have merely served to make confusion worse confounded. Poor Dudleya! many a time it kneweth not where to lay its head! Consequently, not being aware that any one else possessed any relish for the task of revision, the writer some years ago embarked upon this project, knowing only too well that it would be a slow and difficult job and that not a single cent for the support of the work was available. Once begun, however, discontinuance became increasingly impossible, hence we shall proceed as far as we possibly can in an attempt to make the entire genus better known in every way.

The work would never have received the unusual impetus it did were it not for the intense interest of Mr. Howard E. Gates in the species native to Baja California. From his two trips down the peninsula in 1931, he returned with a total of about 30 forms, an exceptionally high proportion of which have since turned out to be new species or subspecies. To Mr. Gates' great credit it must be stated that he has always been more interested in the proper scientific utilization of the plants that he has forwarded to us, than in any reward, pecuniary or otherwise, that he might conceivably receive. And it is no easy task, as we well know from personal experience, to collect plants in the nearly trackless wilds of Baja California!

Many people have aided the writer very materially with plants, information, and in various other ways. It is not possible in the limited space at our command to mention all of them individually, but full acknowledgment of plants, etc., will be made under the appropriate species and at other points.

Historical

The earliest known species of what is now *Dudleya* is perhaps the *Cotyledon caespitosa* described by Haworth in his *Miscellanea naturalia* . . . , p. 180, 1803. It was in the first instance described as coming from the Cape of Good Hope (Africa), but this apparent error was shortly corrected to "Monterey, California." However, a careful study by Dr. LeRoy Abrams of the original description and a later illustration has led to serious questioning as to just what it was that Haworth described and where the plant actually came from. It seems quite certain, in any event, that nothing answering to the original description and illustration has ever been found anywhere in what is now Monterey county. The plant, incidentally, could hardly have disappeared in the meantime since the Dudleyas are a decidedly persistent group of plants. Future study may possibly indicate where the error lies; in any event, the plant currently passing as *D. caespitosa* is emphatically not that species as originally described.

The second species to come to light was described in 1811 by the younger Jacquin as *Sedum cotyledon;* it is now the familiar coastal *D. cotyledon,* a plant which is more strikingly beautiful in nature than in cultivation. The third and fourth species were described together in 1840; these were Nuttall's *Echeveria pulverulenta* and *E. lanceolata,* both now familiar to Californian succulent gardeners as Dudleyas under the same specific names.

The genus under which these three earlier botanists respectively placed their plants is a good indication of the extent of their knowledge of the family Crassulaceae as a whole. Haworth was well acquainted with the two Cotyledons and many other succulent plants from the "Cape," hence it was only natural that he should place his plant in *Cotyledon,* and to describe it at the beginning as coming from the Cape of Good Hope. Jacquin apparently had a good knowledge of the huge and diversified genus *Sedum,* but how he could have identified a plant so unlike a typical *Sedum* as *D. cotyledon* is a trifle too much for us to comprehend, unless it were that he at the time had little or no acquaintance with other related genera. Nuttall deserves no criticism for placing his two species in *Echeveria,* since the disposition was made and the descriptions published by Torrey and Gray, the latter being at the time the more

or less self-appointed dictator concerning things botanical in the United States. *Echeveria* was apparently known by a few species at the time, hence, lacking a larger series of representative species, it seemed logical to group them all together. It is to certain modern taxonomists that most of the present confusion is due.

European botanists have long been famous for their notoriously poor conceptions of the generic status of strictly west-coast American plants, particularly the small annuals and all succulents. What few plants they may have seen in the living condition were grown in overheated greenhouses where they naturally assumed the most abnormal growth forms. Distinguishing characters which could instantly be recognized in the natural habitat of the plant, were so changed or distorted as to be unrecognizable. Plants of the habit of *Echeveria, Urbinia, Dudleya, Pachyphytum, Stylophyllum,* etc., all look pretty much alike after having been grown together in an overheated, humid, poorly lighted hot-house for some time. In this group, moreover, herbarium specimens are dangerously unreliable; how could a "closet botanist" know, for example, that the pedicels and calyx-segments of *Dudleya* elongate sometimes as much as twice their normal length while being pressed? Then there is that ever-amusing European conception of American geography—and the not so amusing continental chauvinism that prompts the immediate rejection of any personal generic name not European in origin. In one or all of these sources reside most of the reasons why the genus *Dudleya* has been bandied about at the whim of almost every person who concerned himself with it.

Nomenclature

The genus *Dudleya* was erected by Britton and Rose in 1903, and first diagnosed in the *Bulletin of the New York Botanical Garden,* vol. 3, p. 12-13. For the type species, they selected Nuttall's *Echeveria lanceolata* as the most representative species among the first few to be described. They did right, as subsequent events proved, in rejecting Haworth's *Cotyledon caespitosa,* which should otherwise have been chosen.

The genus was named in honor of William Russell Dudley, Professor of Systematic Botany in Stanford University from its founding until 1910. A sketch of Professor Dudley's interesting and fruitful life, together with a portrait, appeared in the magazine *Desert* for June, 1932.

During the evolution of the present study, several guiding principles became formulated. The first and perhaps the most important has been the delimitation of the forms to be classified, which were finally decided upon as being species and subspecies. We will now define these terms as they are to be used hereafter. The common designation "variety" has been discarded, first, because of the confusing connotations of the horticulturalist's "variety", and second, because it carries a higher value and significance than is usually given to the taxonomist's "variety." We are employing the distinctions laid down principally by the late Dr. H. M. Hall. Briefly, a species is a major grouping distinctly set off phylogenetically (that is, along evolutionary lines) from all other species in the genus; a subspecies is a subordinate group set off from other subspecies only by lesser but still genetic (or heritable) characters or by various combinations of these. "Thus the subspecies constitutes a more or less definite evolutionary unit, which is itself composed of still smaller units or forms and, on the other hand, unites with other subspecies to constitute a larger natural group, the species." The subspecies should have the same chromosome numbers as the typical form of the species, but the genes which these chromosomes contain will naturally differ.

A large and decidedly representative group of the 80 or more species and subspecies has already been brought together, and more are being added from time to time. The plants are being grown under identical conditions, in order that any characters which might be due to environmental conditions will either disappear or be reduced to such an extent that they become negligible. On the other hand, it has been discovered that certain characters become more pronounced in cultivation. No species has yet been encountered that required any sort of special cultural conditions for its best growth, but it must be kept in mind that all Dudleyas require perfect drainage and not too much water. No unknown form is being described as a new species or subspecies until it has been in the collection for a year or longer and has developed flowers.

The White-Flowered Group

As in any project ever undertaken, "accidents" will happen. In the present case, it has been the astonishing appearance of several white-flowered forms. Hitherto only a single such species has been known, namely, *D. albi-*

flora Rose, which comes from Magdalena Island, Baja California, and is apparently not in cultivation to any extent. Preparatory to describing the new forms, we are presenting a key to all forms so far known which belong in the white-flowered category. It is, of course, possible that other species with white flowers will be discovered later, hence the key at best is merely tentative. As some of the new forms are coming into cultivation, we are citing the source at this time. With the exception of *D. albiflora* Rose, the writer is responsible for all the new names cited below. The abbreviation "ssp." stands for subspecies.

KEY TO SPECIES

Plants generally solitary or composed of 2-3 rosettes; anthers red (or brown in one subspecies) preceding dehiscence. Mainland species.
- Cauline leaves horizontal.
  - Inflorescence compact.
    - *Basal leaves pruinose, narrow, thick and rounded; cauline leaves very fleshy, persistent; flowers pure opaque white.* (Gates #330)..... *D. moranii*
    - Basal leaves heavily white-pulverulent, broad and flat; cauline leaves thin, soon withering; flowers watery with a light straw-yellow suffusion. (Gates #344)..... *D. brittonii*
  - Inflorescence erect-elongated; basal leaves vivid green. (Gates #338)..... *D. viridicata*
- Cauline leaves deflexed or ascending, flattish; inflorescence elongated.
  - *Cauline leaves sharply deflexed.* (Gates #325)..... *D. gatesii*
  - Cauline leaves erect or ascending..... *(D. stellaris)*
    - Anthers usually brown before dehiscence; flowering stems short, stout. (Gates #335)..... *D. stellaris* ssp. *brevicaulis*
    - Anthers red before dehiscence; flowering stems relatively long.
      - Calyx-segments under 8 mm.; corolla-segments acute. (Gates #332)..... *D. stellaris* ssp. *typica*
      - *Calyx-segments over 8 mm.; corolla-segments with acuminate reflexed tips.* (Gates #347)..... *D. stellaris* ssp. *longicaulis*

Plants densely cespitose; anthers yellow preceding dehiscence. Insular species.
- Inflorescence consisting of two secund racemes; leaves densely crowded, long-acuminate (at least, in our specimens), exceedingly brittle. Magdalena Island, Baja California..... *D. albiflora*
- *Inflorescence cymose-paniculate; leaves little crowded, larger, acute or rarely cuspidate-acuminate, not brittle. Prince Island, California.* (Ralph Hoffmann)..... *D. regalis*

[The Editor received the following interesting letter from *Forrest Shreve of the Desert Laboratory of the Carnegie Institute of Washington, D. C., located at Tucson, Arizona.*]

I noticed a brief item in the June number of the Journal of the Cactus & Succulent Society (Vol. III, p. 201) in regard to the occurrence of *Idria columnaris* in Sonora and feel that your readers might be interested in having further information about its occurence on the Mexican mainland.

Its occurrence in Sonora was first brought to our attention by Mr. Gilbert Sykes and the restricted locality has been visited several times by members of our staff since 1923. The locality is about 225 miles south of the head of the Gulf of California and same distance north of Tiburon Island. A small range of granite hills runs from the coast eastward for a distance of about five miles and *Idria* is found on the north slopes of this range, reaching its greatest size near the base but showing little tendency to spread off the granite soil. There are probably two hundred plants in this locality, some of them exceeding 20 feet in height and many of them reaching a basal diameter of 25 to 30 inches.

We have not found the plant at any other locality in Sonora. Two small individuals were moved in 1925 to the patio of the Desert Laboratory, where they have grown a little and have produced leaves and new shoots every spring. Several trees from this locality have also been planted at the Boyce Thompson Arboretum, at Superior, Arizona, and in the succulent garden of the University of Arizona, Tucson. *The tree is known to the Mexicans as Cirio and is* sometimes called Altar Candle Tree.

With reference to the two types of leaves in *Idria*, I might say that it is very similar to its close relative *Fouquieria* in the development of its leaves and thorns. The leaves which appear on the new shoots have a petiole about half an inch long. When these leaves fall the petiole remains and forms the characteristic thorn. When leaves appear on the old branches they arise in clusters from buds in the axils of the thorns and are without petioles. The branches of *Idria* fork to a slight extent, in which case the new branches also arise from the axils of the thorns. In *Fouquieria splendens* it is possible to detect the sharp point of the future thorn by looking near the base of the blade on the under side of the petioled leaves.

It is very interesting to speculate on the manner in which *Idria* became established in Sonora. It is so much more abundant in Lower California that we are compelled to regard that as the place of its origin. The seeds are relatively light and provided with a fibrous wing, which would suggest several means by which they might be disseminated to a considerable distance. The locality in which they have taken a foothold in Sonora is an extremely arid one. Seasonal rainfall measurements which we have made there indicate that there are both winter and summer rains but that the total fluctuates between two and six inches per year.

NOTE: The following 8 pages are the 12th installment from the Britton and Rose reprint of Vol. 1, The Cactaceae.

The Stapelieae

12. Stapelia. The Stapletonia Section

By ALAIN WHITE *and* BOYD L. SLOANE

Like *S. grandiflora,* the "cushioned Stapelia," *S. pulvinata* Mass., has been known since Masson's day. He discovered it in 1792 on Mt. Kamies in Little Namaqualand near Bowesdorp in the north-westerly corner of the Cape Province.

He tells us the Dutch inhabitants called it the Arabian Rose. Sims. Commenting on this in the Botanical Magazine in 1810, he remarked rather amusingly that "the sense of smelling alone is, however, fully sufficient to expel every idea of affinity with that fragrant genus."

The flower is remarkable for the thick cushion of soft purple hairs on the center of the disk and base of the corolla lobes, and for the dense fringe of similar hairs all around the lobes. The color is dark purple brown, with transverse yellow lines on the basal two-thirds of the lobes, while the tips are uniformly purple brown. The shape of the tips has been likened by Berger to the shape of a monk's hood. N. E. Brown describes it by saying that the lobes are "usually rather abruptly contracted into an obtuse point 1/4 to 1/3 inch long, below which they are remarkably concave on the back, so that the point is abruptly recurved and then directed outwards."

We spoke of *S. hirsuta* in our introductory article in the Journal for September, 1931 (Fig. 2). It is a species so widely distributed throughout South Africa and assuming so many varietal forms in different localities and so many hybrid forms under cultivation that it baffles any complete analysis almost as successfully as does *S. variegata.* In general, the chance is favorable that any *Stapletonia* found to-day in American collections, not conforming to the descriptions of other *Stapletonia* species we are including in these articles, will prove to be some variety or some hybrid of *S. hirsuta.* The type itself, strange to say, is no longer known. It was described by Linnaeus in his Hortus Cliffortianus, and N. E. Brown says that all specimens in herbariums dating between 1727 and 1800 belong to it. But in the past century it has disappeared from cultivation altogether. Linnaeus possessed another form, preserved in his own herbarium. It was formerly known as an independent species, *S. patula* Willd., which N. E. Brown in the Flora Capensis re-christened *S. hirsuta var. patula* N. E. Br. It is characterized by the long corolla lobes, whose slenderness is accentuated by their frequently recurved margins. The wing of the inner corona is distinctly emancipated from the inner horn. The flower shown in Fig. — approaches this variety.

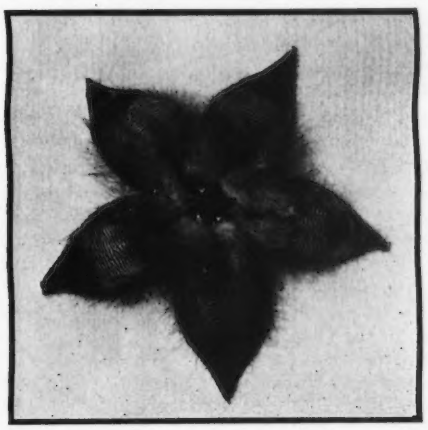

Photo by Sloane

FIG. 63. *S. pulvinata* x .75

N. E. Brown described seven other varieties and the garden hybrids are legion. The specimens we have seen are too confusing for us to attempt any enumeration of them here. Aside from many variations in the corona lobes, these minor forms vary conspicuously in the color and marking of the corolla. In the variety *lutea* N. E. Br., the lobes are wholly primrose yellow, without markings; in the other varieties there are transverse markings, cream-colored to yellow, on a ground purple brown to dark purple. The extent and character of the central hair cushion, the more or less shiny texture of the lobes, their shape and the extent of the uniform triangle of color at their tips, these are a few of the bewildering modifications presented by *S. hirsuta.*

Another *Stapelia* discovered by Masson is the "star-fish," *S. asterias* Mass., which he found in the Karroo in 1792 and which became a favor-

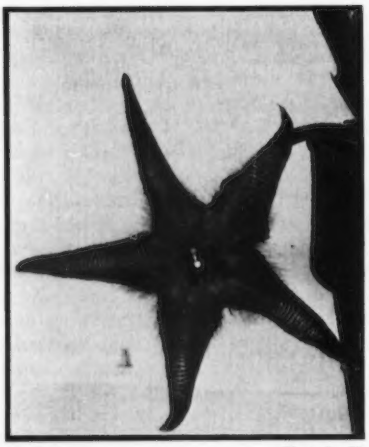

Photo by Sloane

FIG. 64. *S. hirsuta var. patula* x .75

ite among collectors in England in the early part of the eighteenth century. The name has persisted in general use and is applied to-day incorrectly in this country to many *Stapelias,* Orbeas as well as Stapletonias. More recently two varieties have been discovered and with hybridized forms there has resulted much confusion as to the real identity of the species. We have found masquerading under other names what we believe to be the type (Fig. 65), the variety *lucida* N. E. Br. (Fig. 66), and a hybrid form of the variety *gibba* N. E. Br.

The appearance of *S. asterias* differs from the other *Stapletonias.* Instead of the corolla consisting of a disk with five radiating lobes, the lobes themselves seem to start at the central crown, producing the effect described by the name "Starfish." Of course the disk at the base of the lobes exists as in other *Stapletonias,* but it is crossed by five very slight depressions, sometimes edged with hairs, sometimes of a distinct color, which seems to continue the divisions between the lobes all the way down to the corona.

This effect is clearly seen in the odd six-lobed corolla of Fig. 67. Here the flower illustrates the type. It has transverse yellow markings framed by purple brown margins and dark tips to the lobes. In the variety *lucida* the transverse rugosities persist, but the color is uniformly purple brown or purple, and the depressions across the disk from the bays between the lobes to the center are fainter. In the variety *gibba* the margins of the lobes and the depressions across the disk are ochreous yellow and very conspicuous. The two specimens we have seen have a few transverse yellow lines on the lobes, somewhat as in the type. This is probably a hybrid form, as the description calls for uniform coloring within the margins, as in the variety *lucida.*

All the *asterias* have a faint central cushion of short red hairs, this becoming brighter and more noticeable in the variety *gibba.* All the *asterias,* too, are brilliant flowers, the surfaces shiny, as in *S. Peglerae* N. E. Br. and some of the *hirsutas.* It is a species which should be more generally familiar, and we have illustrated it freely, adding a final photograph of a complete plant, which not only shows a flower, but a bud and a seed-pot as well with a common house-fly resting on the seed-pod after his own study of the flower.

We have already spoken of "Miss Pegler's Stapelia", *S. peglerae,* as an example of a Stapletonia with smooth hairless stems. The stems

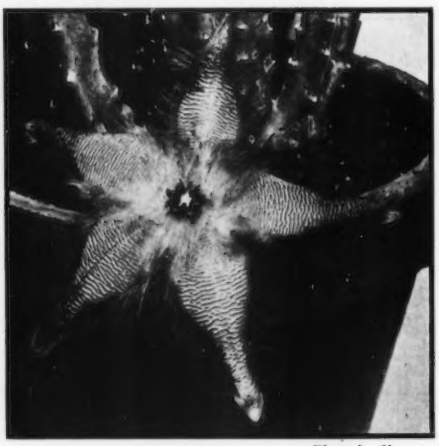

Photo by Sloane

FIG. 65. *S. asterias* x .75

are a beautiful tone of green, immediately recognizable. The species is a free bloomer, the flowers purplish red, hairless except on the margins of the corolla lobes, which show a fringe of fairly long white hairs. The plant is native to dry, rocky slopes and will stand full sunlight well. It comes from Tembuland, in the eastern part of the Cape Province.

In the relationship of *S. grandiflora* is *Stapelia arnoti,* discovered by Arnot in Griqualand West in the time of Sir Henry Barkly. The flower is of medium size, four inches or under, with purple lobes conspicuously tipped with black. The stems are very velvety.

Photo by Sloane

FIG. 66. *S. asterias var. lucila* x .75

S. tsomoensis N. E. Br. is one of the smaller-flowered *Stapletonias,* three inches or less in diameter, of an inconspicuous pale red-brown color, with only a few transverse yellow lines. The name derives from the small town, Tsomo, also in the eastern part of the Cape Province, near which it was first found in the days of Sir Henry Barkly. This curious name has suffered various modifications at the hands of those who did not know its origin, and it reappears locally as *S. tomentosa.* The corruption is not inappropriate, as *S. tsomoensis* is decidedly shaggy on the corolla-disk and on the base of the lobes with long soft red hairs. The lobes are narrow and roll back readily at the tips. The inner corona is again a help to recognition, the inner horns being long and slender and bent outwards well over the outer wing. The stems are less hairy than those of most *Stapletonias,* their slight pubescence being observable only with a lens.

S. conformis N. E. Br., from the south-eastern and central portions of the Cape, is a beautifully colored species, the disk and basal half of the lobes sulphur yellow with numerous fine purple-brown transverse lines, the upper part of the lobes dark purple-brown and the entire lobes narrowly margined with the same color. We owe our specimen to the kindness of Mrs. John D. Wright, of Santa Barbara, who first imported the species to this country. The name, the "similar Stapelia", may refer to the similarity *S. conformis* bears to *Stapelia macowanii* N. E. Br., a closely related plant, but a much rarer one, from somewhat the same territory.

The "bent-flowered" Stapelia, *S. deflexa* Jacq., is another native of the Cape, known in cultivation for well over a hundred years, but with us usually masquerading under other names, such as *S. purpurea.* It is as yet the only representative in American collections of those Stapletonias which have the outer horn or wing of the inner corona replaced by a mere thickened knuckle. It was first described by the Baron N. J. de Jacquin, who in 1806 began a treatise on the Stapelias in the Palace Gardens of the Austrian emperors at Schönbrunn near Vienna. This work was not finished until about 1819, when Europe was beginning to recover from the Napoleonic Wars.

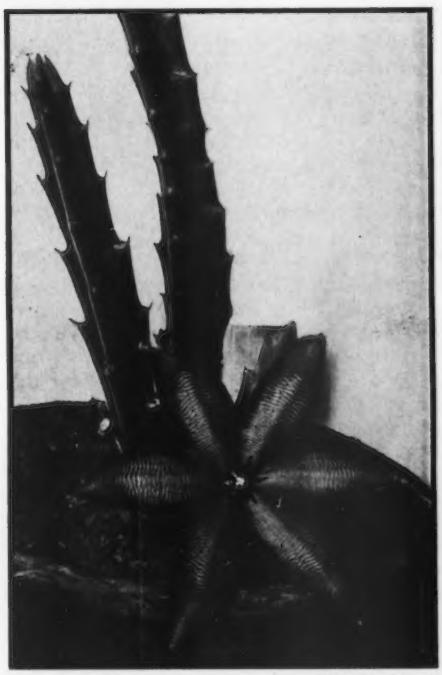

Photo by Sloane

FIG. 67. *Stapelia asterias* showing lobes appearing to start from central crown. x .75

The corolla lobes in *S. deflexa* are unusually wide at the base, wider when taken all together than the circumference of the corolla disk, and this feature has been thought to be the cause, geometrically, why the lobes often bend straight back, a peculiarity from which the name *deflexa* probably derived.

The flowers are between two and three inches in diameter, of a dull purple or brick red, transversely rugose on the lobes of the corolla with ridges of a slightly lighter shade, the lobes fringed with long purple hairs. There is a garden variety *atropurpurea,* also from the Cape, in which the transverse ridges are of a whiter shade, and the fringe around the lobes is composed of red or white hairs. This variety is common in our collections, and is distinguishable by a patch of dark orange at the base of the outer corona lobes. There is a second variety *Brownii* Schinz, thought to be a native of Little Namaqualand, which greatly resembles the type, but which is noteworthy for its unusually long and slender inner corona horns, the most delicate and graceful we have found in any of the *Stapletonias.*

The question of hybrids among the *Stapletonias* is less complicated than it is among the *Orbeas,* yet they are of frequent occurrence, especially in the relationship of *S. hirsuta, S. grandiflora* and *S. deflexa* Besides *S. maculosoides,* mentioned by us in connection with the *Orbeas,* Berger lists a number of interesting forms, which are all probably hybrids, though in two or three of the cases their origin is uncertains *S. virens* Link, *S. multiflora* DC., *S. massoni* Haw., *S. magna* Brgr. *S. glabriflora* N. E. Br., *S. bayfieldii* N. E. Br., and *S. cantabrigiensis* Brgr. These are all names one meets occasionally, but of the various plants we have examined none has conformed to the published descriptions except a specimen of the "Cambridge Stapelia", *S. cantabrigiensis,* in the collection of Mr. Beecroft. The flowers of this hybrid are large, four to six inches, the corolla lobes uniformly brown-red, with many ridges across the lobes. It has a moderate cushion of red-brown hairs at the center and a fringe of the same tone. The name comes from the fact that Berger received from the Cambridge, England, Botanical Gardens the seeds from which, in 1899, he grew his first specimens at La Mortola.

In addition to the *Stapletonias* we have enumerated, several further species may be represented in American collections in the form of seedlings. Until these have flowered and been verified, we cannot speak of them in detail. One particularly looks forward to seeing *S. pillansii,* N. E. Br., a species discovered by Mr. Pillans in the Karroo and sent to Kew in 1904. The remarkable flowers in the variety *attenuata* N. E. Br., sometimes nine inches in diameter, with their long, narrow, curling corolla lobes, are said to be unique among the *Stapelias* by reason of their having the outer corona divided into ten lobes, and in some instances into fifteen lobes.

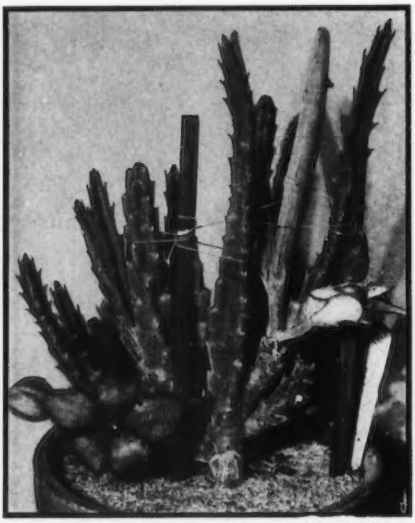

Photo by Sloane

FIG. 68. *S. asterias* x .30

NEW PLANT AND SEED LISTS

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L. V. DE MOELLER, Ave Rayon No. 603, San Pedro, Coah., Mexico. (Free.)

W. H. LIGON, 154 Walton Ave., San Antonio, Texas. (Free.)

Members of the Society wishing seed of *Trichocereus chilensis* from Sr. Gualterio Looser of Santiago, Chile, may still secure them by writing Edgar Baxter, Bellflower, California, and enclosing 3 cents postage.

We are informed by Dr. N. L. Britton that the 4 volumes of "The Cactaceae" are for sale by a man in New York. Any one who is interested in having these may make a bid either direct to Dr. Britton, or to E. M. Baxter, Bellflower, California.

Pachyphytum brevifolium

By ERIC WALTHER

Photo by Eric Walther

Pachyphytum brevifolium Rose.
Plant in collection of Mrs. W. D. Harney

Of the two puzzles discussed in the March number of this Journal (*1), one is herewith submitted as finally solved. The plant then unknown to us, illustrated on the page cited as puzzle number 2, can now definitely be stated to be identical with *Pachyphytum brevifolium* Rose. Flowers of the plant in question were received from E. O. Orpet of Santa Barbara; and we also found it in bloom in the collection of Mrs. W. D. Harney of San Mateo, where the accompanying photo was taken.

Dr. Rose's original description was based on a dried specimen, the type in the Gray Herbarium, and was necessarily somewhat incomplete and unsatisfactory. We therefore take pleasure in presenting the following more ample one.

Pachyphytum brevifolium Rose, North American Flora 22:1:12, 1905.

Plant a low, fleshy subshrub;

Stem distinct, to 25 cm. tall or more, branched from the base, distinctly glutinose or viscid when young between the base of the leaves;

Leaves alternate, distant or somewhat approximate at upper end of shoots, 2 to 4 cm. long, obovate-oblong, obtusish but faintly mucronate, turgid, not terete, but distinctly flattened, very glaucous, color vetiver-green, at times tinged cinnamon-drab;

Inflorescence a simple secund raceme to 20 cm. tall;

Peduncle ascending, slender,

Lower bracts early deciduous,

Raceme nodding in bud, with 6 to 8 flowers;

Upper bracts densely imbricated, broadly ovate, to 1 cm. long, flattened;

Pedicels slender, thickened below calyx, to 8 mm. long or more, ascending at maturity;

Sepals subequal, appressed, deltoid-ovate, acutish, slightly but distinctly shorter than the corolla;

Corolla campanulate, deep red (approximately carmine, Ridgway), to 13 mm. long;

Segments thin, scarcely keeled, acute to shortly acuminate, distinctly appendaged at base of epipetalous stamens.

Photo by Eric Walther

Pachyphytum brevifolium Rose. exact size

* 1: CACTUS JOURNAL, Vol. II, No. 9; page 152.

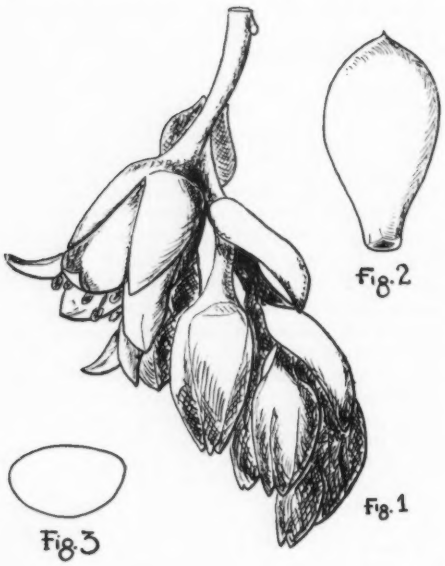

FIG. I. Detail-sketch of inflorescence app. x .2
FIG. 2. Outline of single leaf. x .9
FIG. 3. Cross-section of leaf. x .9

Our plants disagree with Rose's description, l.c. in the following points:

Rose makes no mention of the viscid stem, the leaves in our plants are scarcely terete, and decidedly longer than described by him, the peduncle is much taller, and the sepals are shorter than the corolla and scarcely obtuse.

All of these points of disagreement must be explained on account of dried material having been the base of the original description. While the species is undoubtedly closely allied to *Pachyphytum oviferum* J. A. Purpus, its general resemblance to *Graptopetalum amethystinum* (Rose) E. Walther is much too striking to be passed over as a mere coincidence.

The President's Message

In keeping with a pledge made by me in the February 1931 Cactus Journal, I must present a matter that becomes more aggravating as time passes.

This has to do with the apparent unethical business methods of some plant dealers, both at home and abroad. Complaints concerning these firms frequently come to our attention and divide themselves into the following groups:

1. Those concerning dealers who receive orders, appropriate the money, and then fail to send the plants or to acknowledge receipt of the order;
2. Those concerning dealers who partially fill orders and fail to remit the difference;
3. Those concerning persons who substitute without permission or who send inferior plants to those advertised.

Over against this group are complaints from dealers of persons who fail to remit after receiving plants ordered.

One is just as unethical as the other, and the Society does not condone any such practice. Our membership is open to both professional and amateur, the larger percentage being amateurs. The Society does not maintain a legal department and cannot, and does not desire to, act as arbiter in the matter of disputes between members. However, it does support the principle of ethical business standards and will take such steps as are provided in the Constitution and By-Laws to maintain this principle.

Fortunately, the large majority of plant dealers who are enrolled on our membership list are above suspicion of unethical business dealings. In all fairness to these the buying public should be protected from those who are not.

The following proposals are made to insure a degree of safety to prospective purchasers:

1. That there be maintained in the office of the Society a file containing commendations and complaints concerning persons buying and selling plants and which have been sent in by members;
2. That any member of the society who, before placing an order, desires the standing of a dealer, may ascertain the same from this file by writing to the Society;
3. That members who have just and sufficient causes of complaint against dealers file charges with the Society as provided in Art. II, Sec. 8, of the Constitution and By-Laws.

The average buyer and seller asks no special favors. All he desires is to receive a fair value for his money and to receive his money when a fair value has been given. The Society earnestly hopes that this fair exchange may prevail.

BOYD L. SLOANE.

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Book Reviews

CACTUS CULTURE. *By* Ellen D. Schulz. XVI+157 pp. Ill. *Orange Judd Publishing Co.*, New York 1932. $3.50.

This, the latest contribution to American cactus literature, is by the co-author of *Texas Cacti*, already favorably known to many of our readers. Mrs. Schulz who is Director of the White Museum in San Antonio gives us a very readable little volume intended to instruct the amateur in the elements of the art of growing cacti, with some excursions into the field of other succulents.

The instructions are simple and adequate, and should enable the reader to avoid most of the mistakes beginners are likely to make. A short untechnical introduction on "How to recognize a cactus" is followed by a number of chapters on the making of cactus gardens, both indoor and outdoor. The advice to the beginner, to start with a single plant, get acquainted with the individual by a study of its behavior and reactions, to learn its name and, with the help of literature and enquiries, to get an understanding of its place in the scheme of the family, thus gradually to branch out into whatever field takes the fancy, seems a very good one. It will insure an approach to the subject more satisfying intellectually and emotionally than a plunge into the bewilderment of the usual heterogeneous beginner's collection.

The chapter on other succulents is short, as is proper for a book on cacti, but its hints will probably intrigue many a reader enough to enquire farther into that subject. One lapsus is to be recorded, the attribution of milky juice to the succulent Asclepiads, perhaps pardonably due to a more intimate acquaintance with other, milky-juiced members of the family.

There is a short but adequate chapter on the rock garden, but pl. XIV, presumably given as an example, does not look like a particularly good model to follow. This, however, may be the photographer's fault rather than the designer's. The chapter on propagation from seed, entitled Nurslings, condenses a good deal of valuable information into its few pages. The same may be said of that on graftage. The book concludes with some hints on insect and disease-control.

The photographs illustrating the book are for the most part well-selected, many of them are by Robert Runyon, the noted expert both on cacti and their photography.

The little drawings by Ben Carlton Mead serving as tailpieces at the end of each chapter deserve special mention for their originality and execution.

—J. W.

DEN NYE KAKTUSBOG. By F. M. Knuth Knuthenborg. 135 pp. Ill. Gylendalske Boghandel—*Nordisk Forlag*. Copenhagen 1930.

This sumptuous volume by our member and past-Vice-president, the Count Knuth Knuthenborg should add not a little to the respect we must feel for the accomplishments of the small but progressive nations of the North. We use the plural because the book, though written by a Dane in Danish, has, we believe also appeared in a Swedish edition and may be expected to circulate in Norway as well. Few of our readers may be able to read it with ease, but no one that enjoys fine pictures and good book-making will fail to appreciate it for those qualities alone. The wealth of good photographs, splendidly reproduced, is enough to secure it an honorable place on any cactophile's book-shelf. Many of them are habitat-pictures, taken on the author's travels in Mexico and our Southwest, others of his own very evidently remarkable collection. As he points out, he has tried as far as possible to depict each species in flower. That he has been able to succeed in almost every case is a tribute to his skill as a grower of cacti in high latitudes.

Some of our readers will be aware that Count Knuth specializes in the otherwise somewhat neglected genus *Neolloydia*. It is represented in this book, but not by stinting any other genera, among them many rarely seen in cultivation.

Notable among the illustrations is a view of the author's greenhouse, most original in design and arrangement. In effect it is a full-sized rock garden under glass. The north wall and end-walls are built of rough masonry which makes a harmonious background for the sloping rock-bank on which the collection is planted. A walk along the glassed-in south wall gives access and opportunity to view the plants, among which are many giant specimens, one of them a *Denmoza rhodacantha* of hoary age, also pictured on another page with the author's little son under the caption, "2 years and 200 years." Perhaps as impressive as anything is a photograph of the outdoor rock garden in Knuthenborg Park, where the exceedingly rare *Maihuenia tehuelches* visibly thrives in its new Baltic island home.

In general plan the book is divided into four parts. The first treats of the history of the cacti and their structure. Then follows a chapter describing one of the Count's excursions into Mexican cactus regions, a trip from Monterrey to the Sierra de la Paila and back, illustrating the type of landscape met and the difficulties of travel off the beaten path. The descriptions are enlivened with a good deal of humor. Chapter III deals with growing conditions of cacti in their native environment and in cultivation under glass. The author divides them according to cultural treatment into 12 groups, group I for instance comprising the Mexican species of the *Tierra templada* between 3000 and 6000 feet and certain South American ones from similar climatic areas, while group II includes the desert cacti of California, Arizona and Sonora, for which more difficult subjects a lighter soil and less watering is indicated. The advice given in this chapter, though naturally meant for the benefit of growers in Northern Europe, is not without its uses for others.

Chapter IV gives detailed instructions about soil, watering, pots and potting, labels and the many other things the cactus grower needs to know; incidentally the author condemns a practice apparently popular with some German florists, by which a plant worth 20 pfennings is by means of a phosphorescent composition transformed into a "luminous cactus" selling for 2 Marks to an uncritical public. Let us hope that the fashion does not spread.

Appendices on the systematic division of the family with key to the tribes and sub-tribes, following Britton & Rose and Berger, a lengthier illustrated one with a complete list of the genera containing descriptions and figures of a few species of each, and an index of synonyms conclude the volume.

—J. W.

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By MARY NORWOOD LAWRENCE
376 N. Ave. 57, Los Angeles, Calif.

Latest quotations by New York rare-book dealers, for the four volumes of the "Cactaceae" by Britton and Rose, is $175.00 net for one available set. At that rate you could subscribe to the JOURNAL for 58 years and have the same four volumes in sizeable installments that should be mastered each month. Without doubt the reprint is the greatest work assumed by the Society thus far.

The 40th anniversary celebration of the German Cactus Society will take place in Berlin from September 3 to 11, 1932. An invitation to attend has been extended to the members of the Cactus and Succulent Society of America. The program seems to consists of eats, lectures and eats, and then more eats, also drinks.

The Northern California Branch of the Society is now publishing a Monthly News Bulletin edited by John R. Wright, 114 Sansome Street, San Francisco, Calif. The editor's introductory editorial is as follows:

"We launch our first issue with the highest hopes for a long and successful career. What the Editor lacks in experience he hopes to make up in enthusiasm. He begs his readers to deal patiently with the journalistic errors that he fears may be his.

He hopes to please each one of you—no mean task. He also hopes that all of you will consider yourselves appointed "reporters-at-large" and help to dig up news items that might interest the membership.

Have you a new plant? Have you a trip contemplated? Have you any news of the members down south? Do you know any little helpful hints that others might welcome? We have a membership of nearly two hundred and twenty-five living in this part of the State. We have a common bond in attempting to grow rare and difficult plants. Let's help each other."—THE EDITOR.

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